ABSTRACT

Methods for using novel recombinant adeno-associated virus (rAAV) virion serotypes are disclosed. The methods enable an increase in transduction efficiency of rAAV virions in mammalian muscle cells or tissue. Specifically, the methods described herein employ rAAV-1 and rAAV-6 serotype virions to deliver heterologous nucleic acid molecules of interest to muscle cells or tissue of a mammal. The disclosed methods describe direct injection into muscle tissue, intravascular administration of rAAV virions, and limb perfusion to deliver heterologous nucleic acid molecules of interest to at least one muscle cell of a mammal. The disclosed methods also describe the treatment of hemophilia, using the rAAV virions of the invention, by administering the rAAV virions to a mammalian subject with hemophilia so that blood coagulation proteins, such as Factor VIII or Factor IX, are expressed at levels greater than those achieved using the rAAV-2 serotype.